

<b>NOTICE OF REVISION (NOR)</b> (See MIL-STD-480 for instructions) This revision described below has been authorized for the document listed.		<b>DATE (YYMMDD)</b>  92-08-04	Form Approved OMB No. 0704-0188																														
Public reporting burden for this collection is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.																																	
<b>1. ORIGINATOR NAME AND ADDRESS</b>  Defense Electronics Supply Center Dayton, Ohio 45444-5277	<b>2. CAGE CODE</b>  67268	<b>3. NOR NO.</b>  5962-R268-92																															
	<b>4. CAGE CODE</b>  67268	<b>5. DOCUMENT NO.</b>  <b>5962-87560</b>																															
<b>6. TITLE OF DOCUMENT</b>  MICROCIRCUIT, DIGITAL, TTL-TO-ECL TRANSLATOR, MONOLITHIC SILICON	<b>7. REVISION LETTER</b> <div style="display: flex; justify-content: space-around;"> <span>A (Current)</span> <span>B (New)</span> </div>																																
	<b>8. ECP NO.</b>  <div style="text-align: center;">N/A</div>																																
<b>9. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES</b>  All																																	
<b>10. DESCRIPTION OF REVISION</b>  Sheet 1: Revisions ltr column; add "B". Revisions description column; add "Changes in accordance with NOR 5962-R268-92". Revisions date column; add "92-08-04". Revision level block; change from "A" to "B". Rev status of sheets; for sheets 5, 7, 8, 9, and 10, change from "A" to "B".  Sheets 5, 7, and 8: Table I, supply current negative; add "4/" after $I_{EE}$ . Revision level block; change from "A" to "B".  Sheet 9: Table I, add footnote 4/ as follows: "4/ The $I_{EE}$ limits, although specified in the minimum column, shall not be exceeded, in magnitude, as a maximum value." Revision level block; change from "A" to "B".  Sheet 10: Figure 1, case F, pin numbers 9 through 16; change terminal symbols as follows: <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Pin numbers</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>9</td> <td><math>C_{OUT}</math></td> <td><math>A_{IN}</math></td> </tr> <tr> <td>10</td> <td><math>D_{IN}</math></td> <td>STROBE</td> </tr> <tr> <td>11</td> <td><math>C_{IN}</math></td> <td><math>B_{IN}</math></td> </tr> <tr> <td>12</td> <td><math>V_{CC}</math></td> <td><math>V_{EE}</math></td> </tr> </tbody> </table> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Pin numbers</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>13</td> <td><math>V_{EE}</math></td> <td><math>V_{CC}</math></td> </tr> <tr> <td>14</td> <td><math>B_{IN}</math></td> <td><math>C_{IN}</math></td> </tr> <tr> <td>15</td> <td>STROBE</td> <td><math>\overline{D_{IN}}</math></td> </tr> <tr> <td>16</td> <td><math>A_{IN}</math></td> <td><math>C_{OUT}</math></td> </tr> </tbody> </table> </div> <div style="margin-top: 10px;">           Revision level block; change from "A" to "B".         </div>				Pin numbers	From	To	9	$C_{OUT}$	$A_{IN}$	10	$D_{IN}$	STROBE	11	$C_{IN}$	$B_{IN}$	12	$V_{CC}$	$V_{EE}$	Pin numbers	From	To	13	$V_{EE}$	$V_{CC}$	14	$B_{IN}$	$C_{IN}$	15	STROBE	$\overline{D_{IN}}$	16	$A_{IN}$	$C_{OUT}$
Pin numbers	From	To																															
9	$C_{OUT}$	$A_{IN}$																															
10	$D_{IN}$	STROBE																															
11	$C_{IN}$	$B_{IN}$																															
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15	STROBE	$\overline{D_{IN}}$																															
16	$A_{IN}$	$C_{OUT}$																															
<b>11. THIS SECTION FOR GOVERNMENT USE ONLY</b>  a. CHECK ONE <div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> EXISTING DOCUMENT SUPPLEMENTED BY THIS NOR MAY BE USED IN MANUFACTURE.         </div> <div> <input type="checkbox"/> REVISED DOCUMENT MUST BE RECEIVED BEFORE MANUFACTURER MAY INCORPORATE THIS CHANGE.         </div> <div> <input type="checkbox"/> CUSTODIAN OF MASTER DOCUMENT SHALL MAKE ABOVE REVISION AND FURNISH REVISED DOCUMENT TO:         </div> </div>																																	
b. ACTIVITY AUTHORIZED TO APPROVE CHANGE FOR GOVERNMENT  DESC-ECC	SIGNATURE AND TITLE  Monica L. Poelking Chief, Custom Microelectronics	DATE (YYMMDD)  92-08-04																															
<b>12. ACTIVITY ACCOMPLISHING REVISION</b>  DESC-ECC	REVISION COMPLETED (Signature)  Thanh V. Nguyen	DATE (YYMMDD)  92-08-04																															

DESC FORM 193  
JUL 91  
DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

## 2 1. SCOPE

1.1 Scope. This drawing describes device requirements for class B microcircuits in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices".

1.2 Part or Identifying Number (PIN). The complete PIN shall be as shown in the following example:

<u>5962-87560</u>	<u>01</u>	<u>E</u>	<u>X</u>
Drawing number	Device type (see 1.2.1)	Case outline (see 1.2.2)	Lead finish per MIL-M-38510

1.2.1 Device type. The device type shall identify the circuit function as follows:

<u>Device type</u>	<u>Generic number</u>	<u>Circuit function</u>
01	10H524	Quad TTL-to-ECL translator

1.2.2 Case outlines. The case outlines shall be as designated in appendix C of MIL-M-38510, and as follows:

<u>Outline letter</u>	<u>Case outline</u>
E	D-2 (16-lead, .840" x .310" x .200"), dual-in-line package
F	F-5 (16-lead, .440" x .285" x .085"), flat package
2	C-2 (20-terminal, .358" x .358" x .100"), square chip carrier package

1.3 Absolute maximum ratings.

Supply voltage range	-8.0 V dc to 0.0 V dc
Input voltage range	0.0 V dc to -5.2 V dc
Storage temperature range	-65° C to +165° C
Lead temperature (soldering, 10 seconds)	+300° C
Junction temperature ( $T_J$ )	+165° C
Maximum power dissipation ( $P_D$ ) per device	530 mW
Thermal resistance, junction-to-case ( $\Theta_{JC}$ )	See MIL-M-38510, appendix C

1.4 Recommended operating conditions.

Supply voltage ( $V_{EE}$ )	-5.46 V dc minimum to -4.94 V dc maximum
Case operating temperature range ( $T_C$ )	-55° C to +125° C
Minimum high level input voltage ( $V_{IH}$ ):	
$T_A = +25^\circ\text{C}$	-0.780 V
$T_A = +125^\circ\text{C}$	-0.650 V
$T_A = -55^\circ\text{C}$	-0.840 V
Maximum low level input voltage ( $V_{IL}$ )	-1.950 V

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## 2. APPLICABLE DOCUMENTS

2.1 Government specification, standard, and bulletin. Unless otherwise specified, the following specification, standard, and bulletin of the issue listed in that issue of the Department of Defense Index of Specifications and Standards specified in the solicitation, form a part of this drawing to the extent specified herein.

### SPECIFICATION

#### MILITARY

MIL-M-38510 - Microcircuits, General Specification for.

### STANDARD

#### MILITARY

MIL-STD-883 - Test Methods and Procedures for Microelectronics.

### BULLETIN

#### MILITARY

MIL-BUL-103 - List of Standardized Military Drawings (SMD's).

(Copies of the specification, standard, and bulletin required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Order of precedence. In the event of a conflict between the text of this drawing and the references cited herein, the text of this drawing shall take precedence.

## 3. REQUIREMENTS

3.1 Item requirements. The individual item requirements shall be in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices" and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-M-38510 and herein.

3.2.1 Case outlines. The case outlines shall be in accordance with 1.2.2 herein.

3.2.2 Terminal connections. The terminal connections shall be as specified on figure 1.

3.2.3 Truth table. The truth table shall be as specified on figure 2.

3.2.4 Logic diagram. The logic diagram shall be as specified on figure 3.

3.2.5 Test circuit and switching waveforms. The test circuit and switching waveforms shall be as specified on figure 4.

3.3 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in table I and shall apply over the full case operating temperature range.

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TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions -55°C ≤ T <sub>C</sub> ≤ +125°C unless otherwise specified	Group A subgroups	Limits		Unit			
				Min	Max				
Cases E, F, and 2		Quiescent tests 1/							
High level output voltage	V <sub>OH</sub>	Outputs terminated through 100Ω to -2.0 V V <sub>CC</sub> = +5.0 V V <sub>EE</sub> = -5.2 V GND = 0.0 V 2/	V <sub>R</sub>	V <sub>F</sub>	1 2 3	-1.010 -0.860 -1.060	-0.780 -0.650 -0.840	V	
			2.4	0.4					
			2.4	0.4					
			2.4	0.4					
Low level output voltage	V <sub>OL</sub>		2.4	0.4	1	-1.950	-1.580	V	
			2.4	0.4	2	-1.950	-1.565		
			2.4	0.4	3	-1.950	-1.610		
High level threshold output voltage	V <sub>OHA</sub>		V <sub>IHT</sub>	V <sub>ILT</sub>	1 2 3	-1.010 -0.860 -1.060	-0.780 -0.650 -0.840	V	
			2.0	0.8					
			2.0	0.8					
			2.0	0.8					
Low level threshold output voltage	V <sub>OLA</sub>		2.0	0.8	1	-1.950	-1.580	V	
		2.0	0.8	2	-1.950	-1.565			
		2.0	0.8	3	-1.950	-1.610			
Input clamping voltage	V <sub>D</sub>	GND = 0.0 V I <sub>D</sub> = -10 mA V <sub>CC</sub> = +5.0 V V <sub>EE</sub> = -5.46 V	Ain, Bin, Cin, Din		1, 2, 3		-1.5	V	
		GND = 0.0 V I <sub>D</sub> = -20 mA V <sub>CC</sub> = +5.0 V V <sub>EE</sub> = -5.46 V	Strobe		1, 2, 3		-1.5	V	
Input breakdown current	I <sub>IN</sub>	B <sub>VIN</sub> = 5.5 V V <sub>EE</sub> = -5.46 V V <sub>CC</sub> = +5.0 V GND = 0.0 V		1, 2, 3			1.0	mA	
Forward bias input current	I <sub>INF</sub>	V <sub>CC</sub> = +5.0 V V <sub>F</sub> = 0.4 V V <sub>EE</sub> = -4.94 V GND = 0.0 V	Ain, Bin, Cin, Din		1, 2, 3			-3.2	mA

See footnotes at end of table.

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TABLE I. Electrical performance characteristics -Continued.

Test	Symbol	Conditions -55° C ≤ T <sub>C</sub> ≤ +125° C unless otherwise specified	Group A subgroups	Limits		Unit		
				Min	Max			
Cases E, F, and 2                      Quiescent tests - Continued    1/								
Forward bias input current	V <sub>INF</sub>	V <sub>CC</sub> = +5.0 V V <sub>R</sub> = 2.4 V V <sub>EE</sub> = -4.94 V GND = 0.0 V	Strobe	1, 2, 3		-12.8	mA	
Reverse bias input current	I <sub>R</sub>	V <sub>CC</sub> = +5.0 V V <sub>R</sub> = 2.4 V V <sub>EE</sub> = -5.46 V GND = 0.0 V	Ain, Bin, Cin, Din	1, 2, 3		50	μA	
		V <sub>CC</sub> = +5.0 V V <sub>F</sub> = 0.4 V V <sub>EE</sub> = -5.46 V GND = 0.0 V	Strobe	1, 2, 3		200	μA	
Supply current negative	I <sub>EE</sub>	V <sub>EE</sub> = -5.46 V V <sub>CC</sub> = +5.0 V GND = 0.0 V	2, 3		-72		mA	
			1		-66		mA	
Supply current high	I <sub>CCH</sub>	All inputs = 2.4 V V <sub>CC</sub> = +5.0 V V <sub>EE</sub> = -5.46 V GND = 0.0 V	1, 3			16	mA	
			2			18	mA	
Supply current low	I <sub>CCL</sub>	Strobe = 0.4 V V <sub>CC</sub> = +5.0 V V <sub>EE</sub> = -5.46 V GND = 0.0 V	1, 3			25	mA	
			2			25	mA	
Cases E and F                      DC rapid tests    3/								
High level output voltage	V <sub>OH</sub>	Outputs terminated through 100Ω to -2.0 V V <sub>CC</sub> = +5.0 V V <sub>EE</sub> = -5.2 V GND = 0.0 V    2/	V <sub>R</sub>	V <sub>F</sub>	1 2 3	-1.028 -0.879 -1.079	-0.800 -0.671 -0.861	V
			2.4	0.4				
			2.4	0.4				
			2.4	0.4				
Low level output voltage	V <sub>OL</sub>		2.4	0.4	1	-1.950	-1.586	V
			2.4	0.4	2	-1.950	-1.571	
			2.4	0.4	3	-1.950	-1.616	

See footnotes at end of table.

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TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions -55°C ≤ T <sub>C</sub> ≤ +125°C unless otherwise specified	Group A subgroups	Limits		Unit		
				Min	Max			
Cases E and F		DC rapid tests - Continued 3/						
High level threshold output voltage	V <sub>OHA</sub>	Outputs terminated through 100Ω to -2.0 V V <sub>CC</sub> = +5.0 V V <sub>EE</sub> = -5.2 V GND = 0.0 V 2/	V <sub>IHT</sub>	V <sub>ILT</sub>	1 2 3	-1.028 -0.879 -1.079	-0.800 -0.671 -0.861	V
			2.0	0.8				
			2.0	0.8				
			2.0	0.8				
Low level threshold output voltage	V <sub>OLA</sub>		2.0	0.8	1	-1.950	-1.586	V
			2.0	0.8	2	-1.950	-1.571	
			2.0	0.8	3	-1.950	-1.616	
Input clamping voltage	V <sub>D</sub>	V <sub>CC</sub> = +5.0 V I <sub>D</sub> = -10 mA V <sub>EE</sub> = -5.46 V GND = 0.0 V	Ain, Bin, Cin, Din		1, 2, 3		-1.5	V
		V <sub>CC</sub> = +5.0 V I <sub>D</sub> = -20 mA V <sub>EE</sub> = -5.46 V GND = 0.0 V	Strobe		1, 2, 3		-1.5	V
Input breakdown current	I <sub>IN</sub>	B <sub>VIN</sub> = 5.5 V V <sub>EE</sub> = -5.46 V V <sub>CC</sub> = +5.0 V GND = 0.0 V		1, 2, 3			1.0	mA
Forward bias input current	I <sub>INF</sub>	V <sub>CC</sub> = +5.0 V V <sub>F</sub> = 0.4 V V <sub>EE</sub> = -4.94 V GND = 0.0 V	Ain, Bin, Cin, Din		1, 2, 3		-3.2	mA
		V <sub>CC</sub> = +5.0 V V <sub>R</sub> = 2.4 V V <sub>EE</sub> = -4.94 V GND = 0.0 V	Strobe		1, 2, 3		-12.8	mA
Reverse bias input current	I <sub>R</sub>	V <sub>CC</sub> = +5.0 V V <sub>R</sub> = 2.4 V V <sub>EE</sub> = -5.46 V GND = 0.0 V	Ain, Bin, Cin, Din		1, 2, 3		50	μA
		V <sub>CC</sub> = +5.0 V V <sub>F</sub> = 0.4 V V <sub>EE</sub> = -5.46 V GND = 0.0 V	Strobe		1, 2, 3		200	μA

See footnotes at end of table.

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TABLE I. Electrical performance characteristics -Continued.

Test	Symbol	Conditions -55° C ≤ T <sub>C</sub> ≤ +125° C unless otherwise specified	Group A subgroups	Limits		Unit		
				Min	Max			
Cases E and F DC rapid tests - Continued 3/								
Supply current negative	I <sub>EE</sub>	V <sub>EE</sub> = -5.46 V V <sub>CC</sub> = +5.0 V GND = 0.0 V	2, 3	-71		mA		
			1	-65		mA		
Supply current high	I <sub>CCH</sub>	V <sub>CC</sub> = +5.0 V All inputs = 2.4 V V <sub>EE</sub> = -5.46 V GND = 0.0 V	1, 3		16	mA		
			2		18	mA		
Supply current low	I <sub>CCL</sub>	V <sub>CC</sub> = +5.0 V Strobe = 0.4 V V <sub>EE</sub> = -5.46 V GND = 0.0 V	1, 3		25	mA		
			2		25	mA		
Case 2 DC rapid tests 3/								
High level output voltage	V <sub>OH</sub>	Outputs terminated through 100Ω to -2.0 V V <sub>CC</sub> = +5.0 V V <sub>EE</sub> = -5.2 V GND = 0.0 V 2/	V <sub>R</sub>	V <sub>F</sub>				V
			2.4	0.4	1	-1.034	-0.806	
			2.4	0.4	2	-0.886	-0.678	
			2.4	0.4	3	-1.086	-0.868	
Low level output voltage	V <sub>OL</sub>		2.4	0.4	1	-1.950	-1.588	V
			2.4	0.4	2	-1.950	-1.574	
			2.4	0.4	3	-1.950	-1.619	
High level threshold output voltage	V <sub>OHA</sub>		V <sub>IHT</sub>	V <sub>ILT</sub>				V
			2.0	0.8	1	-1.034	-0.806	
			2.0	0.8	2	-0.886	-0.678	
			2.0	0.8	3	-1.086	-0.868	
Low level threshold output voltage	V <sub>OLA</sub>		2.0	0.8	1	-1.950	-1.588	V
			2.0	0.8	2	-1.950	-1.574	
			2.0	0.8	3	-1.950	-1.619	

See footnotes at end of table.

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TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions -55°C ≤ T <sub>C</sub> ≤ +125°C unless otherwise specified	Group A subgroups	Limits		Unit	
				Min	Max		
Case 2 DC rapid tests - Continued 3/							
Input clamping voltage	V <sub>D</sub>	V <sub>CC</sub> = +5.0 V I <sub>D</sub> = -10 mA V <sub>EE</sub> = -5.46 V GND = 0.0 V	Ain, Bin, Cin, Din	1, 2, 3		-1.5	V
		V <sub>CC</sub> = +5.0 V I <sub>D</sub> = -20 mA V <sub>EE</sub> = -5.46 V GND = 0.0 V	Strobe	1, 2, 3		-1.5	V
Input breakdown current	I <sub>IN</sub>	B <sub>VIN</sub> = 5.5 V V <sub>EE</sub> = -5.46 V V <sub>CC</sub> = +5.0 V GND = 0.0 V		1, 2, 3		1.0	mA
Forward bias input current	I <sub>INF</sub>	V <sub>CC</sub> = +5.0 V V <sub>F</sub> = 0.4 V V <sub>EE</sub> = -4.94 V GND = 0.0 V	Ain, Bin, Cin, Din	1, 2, 3		-3.2	mA
		V <sub>CC</sub> = +5.0 V V <sub>R</sub> = 2.4 V V <sub>EE</sub> = -4.94 V GND = 0.0 V	Strobe	1, 2, 3		-12.8	mA
Reverse bias input current	I <sub>R</sub>	V <sub>CC</sub> = +5.0 V V <sub>R</sub> = 2.4 V V <sub>EE</sub> = -5.46 V GND = 0.0 V	Ain, Bin, Cin, Din	1, 2, 3		50	μA
		V <sub>CC</sub> = +5.0 V V <sub>F</sub> = 0.4 V V <sub>EE</sub> = -5.46 V GND = 0.0 V	Strobe	1, 2, 3		200	μA
Supply current negative	I <sub>EE</sub>	V <sub>EE</sub> = -5.46 V V <sub>CC</sub> = +5.0 V GND = 0.0 V	2, 3	-71		mA	
			1	-65		mA	

See footnotes at end of table.

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TABLE I. Electrical performance characteristics -Continued.

Test	Symbol	Conditions -55° C ≤ T <sub>C</sub> ≤ +125° C unless otherwise specified	Group A subgroups	Limits		Unit
				Min	Max	
Case 2 DC rapid tests - Continued 3/						
Supply current high	I <sub>CCH</sub>	V <sub>CC</sub> = +5.0 V All inputs = 2.4 V V <sub>EE</sub> = -5.46 V GND = 0.0 V	1, 3		16	mA
			2		18	mA
Supply current low	I <sub>CCL</sub>	V <sub>CC</sub> = +5.0 V Strobe = 0.4 V V <sub>EE</sub> = -5.46 V GND = 0.0 V	1, 3		25	mA
			2		25	mA
Cases E, F, and 2 AC tests						
Transition time	t <sub>TLH</sub> , t <sub>THL</sub>	V <sub>EE</sub> = -2.94 V V <sub>CC</sub> = +7.0 V C <sub>L</sub> ≤ 5 pF Load all outputs through 100Ω to ground GND = +2.0 V See figure 4	9 10 11	0.45 0.5 0.4	2.0 2.5 1.8	ns
Propagation delay time, A, B, C, or D input to A, B, C, or D output	t <sub>PHH1</sub> , t <sub>PLL1</sub> , t <sub>PHL1</sub> , t <sub>PLH1</sub> ,		9 10 11	0.55 0.50 0.50	2.4 3.5 2.1	ns
			9 10 11	0.55 0.85 0.55	2.5 3.6 2.0	ns
			t <sub>PHH2</sub> , t <sub>PLL2</sub> , t <sub>PHL2</sub> , t <sub>PLH2</sub> ,			

- 1/ The quiescent limits are determined after a device has reached thermal equilibrium. This is defined as the reading taken with the device in a socket with ≥ 500 LFPM of +25°C, +125°C, or -55°C (as applicable) air blowing on the unit in a transverse direction with power applied for at least 4 minutes before the reading is taken. This method was used for theoretical limit establishment only. All devices shall be tested to the delta V (rapid test) conditions specified herein. The rapid test method is an equivalent method of testing quiescent conditions.
- 2/ The high and low level output current varies with temperature, and can be calculated using the following formula:  

$$I_{OH} = (-2\text{ V} - V_{OH})/100\Omega$$

$$I_{OL} = (-2\text{ V} - V_{OL})/100\Omega$$
- 3/ The dc rapid test forcing functions and limits are used for all DC testing. These limits are determined for each device type based on the power dissipation and package type. The rapid test (delta V) limits and forcing functions are skewed allowing rapid testing to be performed at standard temperatures without the addition of delta T's.

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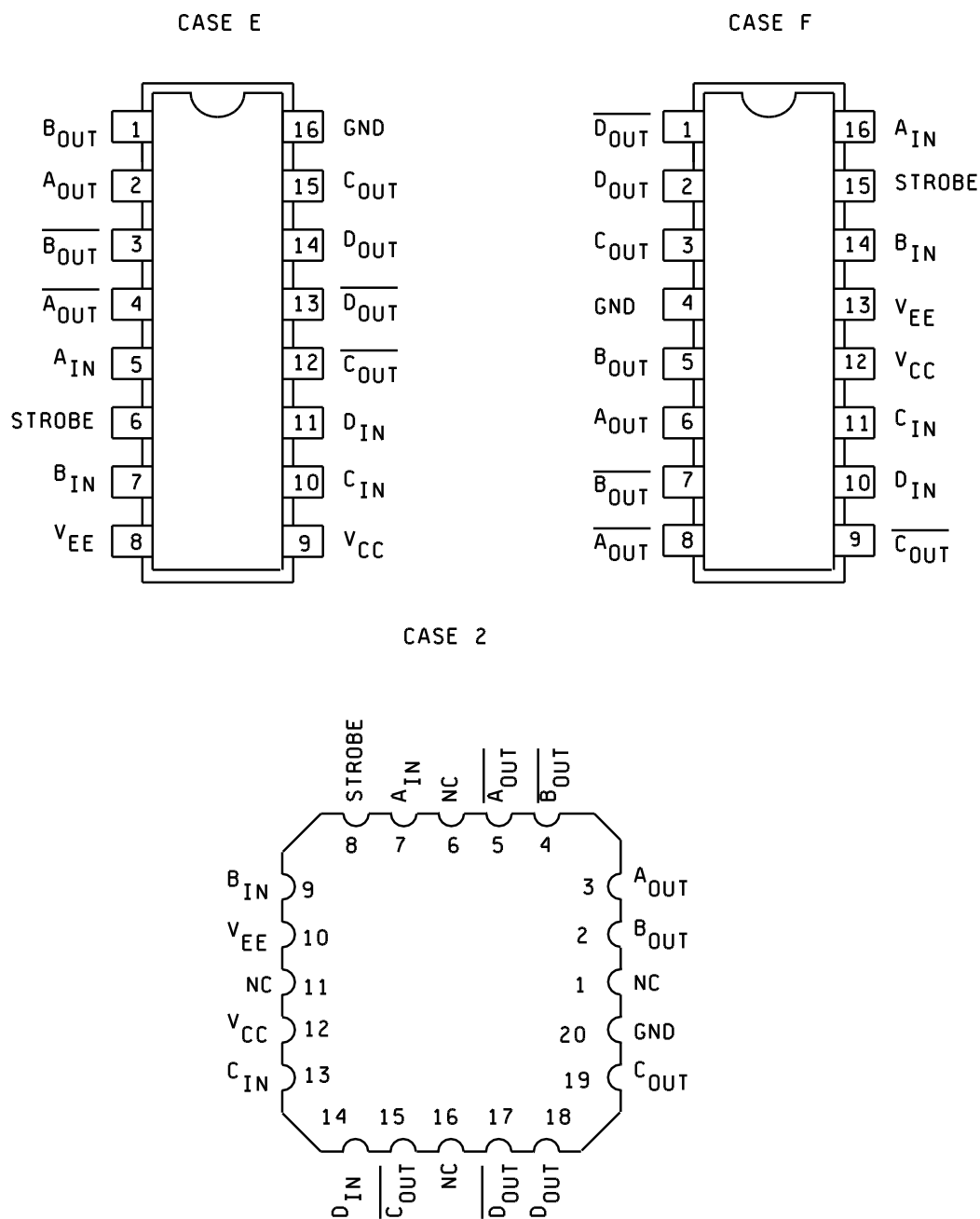


FIGURE 1. Terminal connections.

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Strobe	Input	Out	$\overline{\text{Out}}$
L	X	L	H
H	L	L	H
H	H	H	L

L = Low level  
 H = High level  
 X = Irrelevant

FIGURE 2. Truth table.

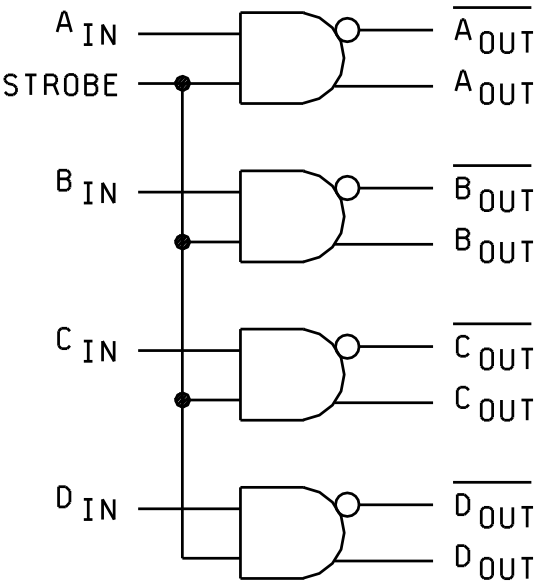
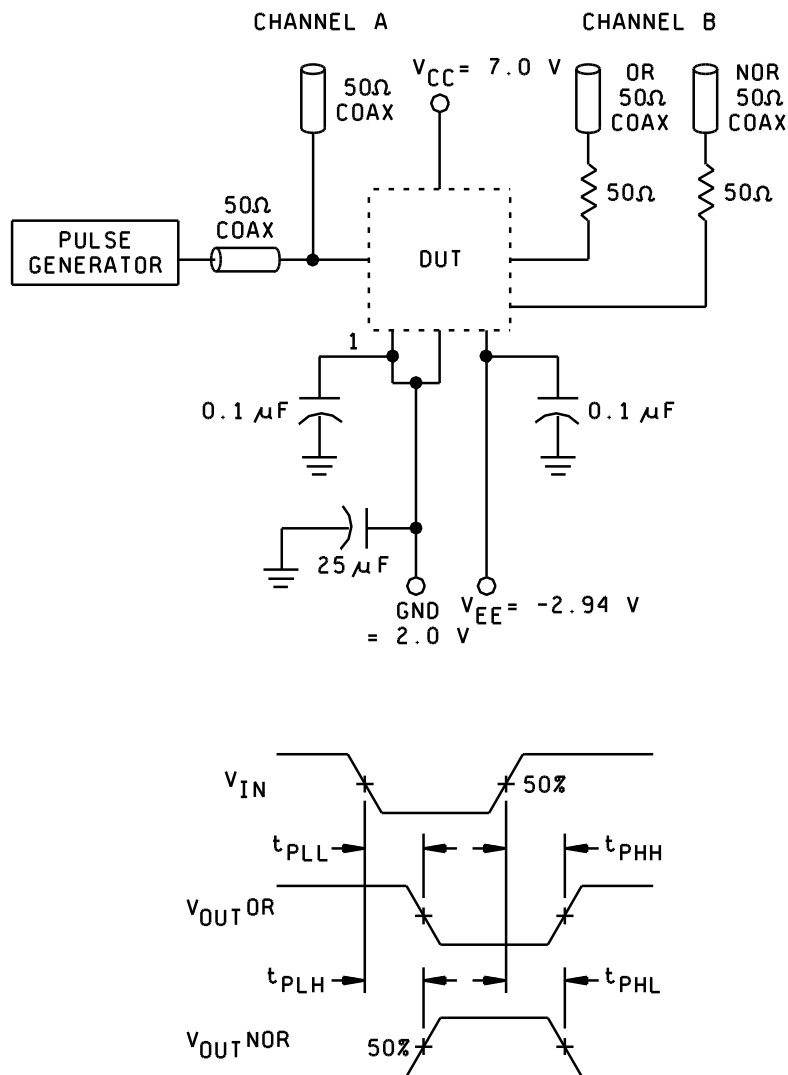


FIGURE 3. Logic digram.

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NOTES:

1. Pulse generator characteristics: PRR = 1 MHz,  $t_{THL} = t_{TLH} = 2.0 \pm 2 \text{ ns}$  (20 to 80 percent), duty cycle = 50 percent.
2. The 50Ω resistor in series with the 50Ω coax constitutes the 100Ω load.

FIGURE 4. Test circuit and switching waveforms.

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3.4 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table I.

3.5 Marking. Marking shall be in accordance with MIL-STD-883 (see 3.1 herein). The part shall be marked with the PIN listed in 1.2 herein. In addition, the manufacturer's PIN may also be marked as listed in MIL-BUL-103 (see 6.6 herein).

3.6 Certificate of compliance. A certificate of compliance shall be required from a manufacturer in order to be listed as an approved source of supply in MIL-BUL-103 (see 6.6 herein). The certificate of compliance submitted to DESC-ECC prior to listing as an approved source of supply shall affirm that the manufacturer's product meets the requirements of MIL-STD-883 (see 3.1 herein) and the requirements herein.

3.7 Certificate of conformance. A certificate of conformance as required in MIL-STD-883 (see 3.1 herein) shall be provided with each lot of microcircuits delivered to this drawing.

3.8 Notification of change. Notification of change to DESC-ECC shall be required in accordance with MIL-STD-883 (see 3.1 herein).

3.9 Verification and review. DESC, DESC's agent, and the acquiring activity retain the option to review the manufacturer's facility and applicable required documentation. Offshore documentation shall be made available onshore at the option of the reviewer.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with section 4 of MIL-M-38510 to the extent specified in MIL-STD-883 (see 3.1 herein).

4.2 Screening. Screening shall be in accordance with method 5004 of MIL-STD-883, and shall be conducted on all devices prior to quality conformance inspection. The following additional criteria shall apply:

a. Burn-in test, method 1015 of MIL-STD-883:

(1) Test condition A, B, C, or D using the circuit submitted with the certificate of compliance (see 3.6 herein).

(2)  $T_A = +125^{\circ}\text{C}$ , minimum.

b. Interim and final electrical test parameters shall be as specified in table II herein, except interim electrical parameter tests prior to burn-in are optional at the discretion of the manufacturer.

4.3 Quality conformance inspection. Quality conformance inspection shall be in accordance with method 5005 of MIL-STD-883 including groups A, B, C, and D inspections. The following additional criteria shall apply.

##### 4.3.1 Group A inspection.

a. Tests shall be as specified in table II herein.

b. Subgroups 4, 5, 6, and 8 in table I, method 5005 of MIL-STD-883 shall be omitted.

c. Subgroup 7 tests shall include verification of the truth table.

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TABLE II. Electrical test requirements.

MIL-STD-883 test requirements	Subgroups (per method 5005, table I)
Interim electrical parameters (method 5004)	1
Final electrical test parameters (method 5004)	1*, 2, 3, 7*, 9
Group A test requirements (method 5005)	1, 2, 3, 7, 9 10, 11
Groups C and D end-point electrical parameters (method 5005)	1, 2, 3

\* PDA applies to subgroup 1 and 7.

#### 4.3.2 Groups C and D inspections.

- a. End-point electrical parameters shall be as specified in table II herein.
- b. Steady-state life test conditions, method 1005 of MIL-STD-883:
  - (1) Test condition D using the circuit submitted with the certificate of compliance (see 3.6 herein).
  - (2)  $T_A = +125^{\circ}\text{C}$ , minimum.
  - (3) Test duration: 1,000 hours, except as permitted by appendix B of MIL-M-38510 and method 1005 of MIL-STD-883.

### 5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-M-38510.

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## 6. NOTES

6.1 Intended use. Microcircuits conforming to this drawing are intended for use when military specifications do not exist and qualified military devices that will perform the required function are not available for OEM application. When a military specification exists and the product covered by this drawing has been qualified for listing on QPL-38510, the device specified herein will be inactivated and will not be used for new design. The QPL-38510 product shall be the preferred item for all applications.

6.2 Replaceability. Microcircuits covered by this drawing will replace the same generic device covered by a contractor-prepared specification or drawing.

6.3 Configuration control of SMD's. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. This coordination will be accomplished in accordance with MIL-STD-481 using DD Form 1693, Engineering Change Proposal (Short Form).

6.4 Record of users. Military and industrial users shall inform Defense Electronics Supply Center when a system application requires configuration control and the applicable SMD. DESC will maintain a record of users and this list will be used for coordination and distribution of changes to the drawings. Users of drawings covering microelectronics devices (FSC 5962) should contact DESC-ECC, telephone (513) 296-6022.

6.5 Comments. Comments on this drawing should be directed to DESC-ECC, Dayton, Ohio 45444, or telephone (513) 296-8525.

6.6 Approved source of supply. An approved source of supply is listed in MIL-BUL-103. The vendor listed in MIL-BUL-103 has agreed to this drawing and a certificate of compliance (see 3.6 herein) has been submitted to and accepted by DESC-ECC.

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# STANDARDIZED MILITARY DRAWING SOURCE APPROVAL BULLETIN

DATE: 92-01-27

Approved sources of supply for SMD 5962-87560 are listed below for immediate acquisition only and shall be added to MIL-BUL-103 during the next revision. MIL-BUL-103 will be revised to include the addition or deletion of sources. The vendors listed below have agreed to this drawing and a certificate of compliance has been submitted to and accepted by DESC-ECC. This bulletin is superseded by the next dated revision of MIL-BUL-103.

Standardized Military drawing PIN	Vendor CAGE number	Vendor similar PIN <u>1/</u>
5962-8756001EX	04713	10H524/BEAJC
5962-8756001FX	04713	10H524/BFAJC
5962-87560012X	04713	10H524M/B2AJC

1/ Caution. Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.

Vendor CAGE  
number

04713

Vendor name  
and address

Motorola, Incorporated  
5005 E. McDowell Road  
Phoenix, AZ 85008  
Point of contact: 7402 S. Price Road  
Tempe, AZ 85283

The information contained herein is disseminated for convenience only and the Government assumes no liability whatsoever for any inaccuracies in this information bulletin.